

## *Holiday message from the director*

**I**welcome this opportunity to extend my best wishes to all Marshall Center employees, contractors and your families for a safe and happy holiday season.

This is a festive and special time for all of us to observe our own holiday traditions as we take time to reflect on good memories, share special moments and look forward to a prosperous new year.

Let us continue to work together to build on our strengths and successes as we go forward with our roles and missions.

Loa and I extend our best to you and yours. May 1999 be a year of abundant health and happiness.

Warm regards,

**Art Stephenson**  
Marshall Center Director



NASA photo

## ***STS-95 crew visits Marshall; parade honors heroes***

Crew members of mission STS-95 visited the Marshall Center Tuesday to present employees and contractors with highlights of their mission. Thousands lined the streets in downtown Huntsville for a parade honoring the heroic crew. *See pages 4-5 for more photos of the memorable day.*

## **Making space travel affordable**

### *NASA selects Future-X flight demonstrator and experiments*

by Deana Nunley  
Media Relations Office

**N**ASA has selected The Boeing Company of Downey, Calif., for negotiations leading to possible award of a four-year cooperative agreement to

develop the first in a continuous series of advanced technology flight demonstrators called "Future-X."

Total value of the cooperative agreement, including NASA and Boeing contributions, is estimated at \$150 million, with an approximate 50/50 sharing arrangement. Work under the cooperative agreement will begin immediately depending on successful negotiations. Pending results of these negotiations, alternative designs are available for NASA selection.



**An artist's concept of an advanced technology vehicle.**

In addition, three companies and three NASA Centers were selected for seven Future-X flight experiments with a total estimated value of \$24 million.

The Future-X effort will be managed by the Space Transportation Programs  
*See Future-X on page 7*

**"The safer you are, the better you live"**

*Safety slogan submitted  
by Jeff Wesley, EB14*

# Fastrac engine's first hot-fire test successfully completed

The Marshall-developed Fastrac engine — the first new rocket engine developed in the United States in nearly 20 years — successfully completed its first hot-fire test lasting 2.5 seconds Dec. 11 at the Horizontal Test Facility at the Stennis Space Center, Miss.

Fastrac marks the first time NASA and industry partners have designed, developed and analyzed a rocket engine in-house at Marshall. The project is an initial focus of NASA's Advanced Space Transportation Program, managed by the Marshall Center.

The Fastrac engine, which is the power plant for the X-34 Reusable Launch Vehicle technology demonstration vehicle, is scheduled to undergo approximately 100 tests in 1999. Tests to be conducted during the upcoming weeks will include slightly longer tests as the start transient of the engine is evaluated.

## Center engineer named recipient of Golden Torch Award

Marshall Center engineer Gloria Hullet-Smith has been named winner of the 1999 Lifetime Achievement in Government Award by the National Society of Black Engineers national executive board. Hullet-Smith will be recognized



**Gloria Hullet-Smith**

March 26 at the organization's 2nd Annual Golden Torch Awards Ceremony in Kansas City, Mo.

The primary goal of the awards is to recognize excellence among African American technical professionals, corporate, government and academic leaders, and university and pre-college students.

### Exchange ballots due today

Today is the deadline for employees to submit ballots for two elective positions on the Marshall Center Exchange Council. The candidates are Bennie Jacks, AB11; R. Brian Key, EJ44; Terry Mitchell, PP02; Iris Phillips, EL02; Mary Rutledge, CO50; and May Wales, AM01.

The Exchange Council is responsible for administering Exchange funds used for employee activities. Ballots are available in the Exchange business office, Bldg. 4752.

### Blood drive Friday

The American Red Cross will hold a blood drive at the Marshall Center from 8 a.m.-1:30 p.m. Friday at Bldg. 4752. Those whose last names begin with T-Z should donate at 8 a.m.; Q-S, 8:30 a.m.; M-P, 9 a.m.; I-L, 9:30 a.m.; G-H, 10 a.m.; C-F, 10:30 a.m.; and A-B, 11 a.m. If you are unable to make your assigned appointment time, Red Cross representatives will be available until 1:30 p.m. and will be glad to assist you when you arrive.

### Rollout training available

The Employee and Organizational Development Center at Marshall is offering several NPG 7120.5a Rollout training classes. The course is designed to familiarize program and project personnel with the new NASA Program/Project Management Process and reinforce top-level rollout strategy originally presented Nov. 9 at Marshall. The 12-hour class is limited to 25 and employees may register via AdminSTAR. A training request form is not required. Training dates are Jan. 26-27, 28-29, Mar. 9-10, and 11-12. For more information, contact Stephanie Elliott at 544-7553 or Renee Higgins at 544-8864.



Center Director Art Stephenson, left, and his wife, Loa, greet one of the many Marshall Center employees during the annual Marshall Holiday Reception Dec. 9 in Bldg. 4752.



NASA photos by Adeline Byford

Serenading employees with festive songs during the reception was the "Barber Shop Quartet," featuring Center employees, from left, Woody Bombara, JD Horne, Bill Anderson and Ken Reed.

# Family

*Marshall's Mack Blackman and wife, Melinda, offer children the greatest Christmas gift of all*

*by Mike Wright & Angela Storey*

This year seven kids at the Mack Blackman family in Huntsville will receive something that many kids in Huntsville or anywhere else might not understand. Christmas will bring the sense that they now have something permanent in their lives — a mother, a father and another brother. In simple terms — a family.

Earlier this year, Mack, his wife Melinda and the children stood before Madison County Judge Frank Riddick. That event made it official. The seven kids were now officially members of the Blackman family. Counting Mack, Melinda and their other son Ryan, who they adopted 11 years ago, that made a family of 10.

The process of adopting the additional children started two years ago. Blackman says it started when Ryan went to talk to Santa Claus at the mall. "He told Santa he wanted three brothers and three sisters," said Blackman, a personnel management specialist at the Marshall Center. "Ryan got that plus an extra brother."

Mack and Melinda wanted Ryan to have some brothers and sisters. So now, after a two-year process, Christmas dinner at the Blackman family table will include Ryan, 11; Rebecca, 10; James, 9; twins Michael and Christopher, 8; Leland 7; Daisy, 5; and Sharon, 4.

"We have at least one child in every grade at Monte Sano Elementary School," said Blackman.

The family travels in a 15-passenger van. Getting the kids to soccer practice, baseball, band practice, dance lessons and softball practice involves logistics comparable to sending U.S. troops to the Persian Gulf, joke the parents. A home with seven bedrooms is useful and so are two washers and two dryers.

During the two years it took for the adoption to become final, the Blackmans learned more about the process than when adopting Ryan. "We learned there are not a lot of kids available for adoption," said Blackman. "The number of infants is small and the waiting period is long."

Adopting the seven children took time for paperwork and for everyone to feel comfortable. For six weeks, the children visited on weekends. They moved in the week of Thanksgiving 1997.

Blackman vividly remembers his conversation with the social worker who called to say that an opportunity had arisen to adopt. "The social worker got the first part out pretty quick," said Blackman. Then came a long pause when he asked the social worker for the rest of the story. "And?" he asked.

And, there were seven.



Photo by Mack Blackman

**The Blackman children pose outside their home in Huntsville for a family snapshot. From left, bottom row, Sharon, 4; Daisy, 5; middle row, Christopher, 8; Leland, 7; Michael, 8; top row, James, 9; Ryan, 11; and Rebecca, 10.**

What about the adjustment for Ryan, Mack and Melinda? "It was a huge adjustment for Ryan," said Blackman. "He was accustomed to being the only kid. He wanted them [his new brothers and sisters], but there have been times when ...," said Blackman laughing. The adjustments have grown a little easier for all concerned.

Now the focus is on Christmas. The Blackmans called a family meeting, with legal pad in hand, to take down requests for gifts. "None of the kids wanted any huge amount of things," said Blackman. "The seven children are not completely accustomed to Christmas." When they were in foster homes and under the sponsorship of the Department of Human Resources, Santa wasn't always as dependable as he might have been. "Some years they had gifts, and some years there was nothing," Blackman said. "The children don't really know what to think about this Santa Claus guy."

But the gift that Blackman feels the children want the most is something permanent in their lives. "Rebecca, for example, had been in four schools by the time she was in the second grade," he said. Now that everything is official, the kids understand that they are with their permanent family."

That, and the love that goes with it, are of course, the greatest gifts any child can receive at Christmas. ♥

# Marshall Center welcomes STS-95 crew

Tuesday marked a special day for the Marshall Center and a historic one for the city of Huntsville.

STS-95 crew members visited Marshall to present mission highlights at noon in Bldg. 4752. The crew also briefed local media during their visit at Marshall, and spoke to Huntsville-area residents at the Von Braun Center.

Thousands of flag-waving spectators lined downtown Huntsville streets to catch a glimpse of the heroic crew.

The enthusiasm of STS-95 Commander Curt Brown ignited cheers from onlookers as the crew members made their way through the city. Parade participants handed out American flags, courtesy of the Alabama Aerospace Commission.



*NASA photos*



Center Director Art Stephenson receives an STS-95 memento from Commander Curt Brown.



Center Chief Financial Officer Dave Bates leads motorcycle group in parade.



Marshall employees participate in honoring the STS-95 crew.



AI Signal Research Inc., supporting the CaER Directorate, and Center employees designed and built the Marshall Center float.



America's future astronauts represent U.S. Space Camp in parade.



Spectators of all ages enjoyed the historic event.



Thumbs up from John Glenn.



Sharon Hancock, of Computer Sciences Corporation, sings the National Anthem.

**Parade participants included:**

- Marshall Space Flight Center employees
- Academy for Arts and Academics
- AI Signal Research, Inc.
- AJT & Associates
- Association for Retarded Citizens
- Bentley's
- Boeing
- Challenger Middle School
- U.S. Rep. Bud Cramer
- CSC Services
- Creative Management Technology
- Danville High School
- Ed White Middle School
- Hernandez Engineering
- LB&B Inc.
- Lee High School
- Lockheed Martin Engineering & Science
- Madison County Commissioner
- Mayor of Huntsville
- Mayor of Madison
- National Space Club
- New Technology, Inc.
- Rockwell International
- Scientific and Commercial Systems Corp.
- Sverdrup Technology
- Teledyne Brown Engineering
- Thiokol
- University of Alabama in Huntsville
- Universities Space Research Association
- U.S. Army Missile Command
- U.S. Space & Rocket Center

**Sponsors for the Von Braun Center event included:**

- Madison County Commission
- City of Huntsville
- City of Madison
- Huntsville/Madison County Chamber of Commerce
- Decatur/Morgan County Chamber of Commerce
- Alabama Aerospace Commission
- National Space Club (Huntsville chapter)
- NASA Alumni League (Marshall Space Flight Center chapter)
- U.S. Space & Rocket Center



Thousands surround the Madison County Courthouse for downtown celebration.

# Tower at Stennis Center named after von Braun

The following editorial was reprinted from the "LAGNIAPPE," the monthly publication of the Stennis Space Center, Miss.

We officially named the "conning tower" over the Visitors Center after a man who is largely responsible for us all being here, testing rockets and conducting science and space applications programs — Dr. Wernher von Braun. Our director, Roy Estess, was assisted by Apollo 13 astronaut Fred Haise and a group of fine Eagle Scouts for the dedication of the tower to von Braun during the observance of NASA's 40th anniversary Oct. 23.

Naming the 90-foot observation tower after von Braun is a most appropriate gesture for someone so closely associated with this installation. Not only was the world-renowned scientist largely responsible for getting this "national rocket testing site" built, he had a personal input into the building of the Central Control Building, known today as the Visitors Center, with its futuristic observation tower.

***"What a legacy we have in this great man and what he bequeathed to us."***

— Stennis Space Center's LAGNIAPPE



Courtesy of Stennis Center

The tower, resembling a ship's conning tower, was Dr. Wernher von Braun's idea of providing a vantage for engineers to study static firings from a safe distance.

During the design phase of the installation in 1961, future planners at the Marshall Center envisioned several test stands to not only test Saturn rockets, but other propulsion systems that were planned for America's future in space. The tower, resembling a ship's conning tower, was von Braun's idea of a good vantage point for the engineers to study the tests and for media and important

visitors to view the dramatic static firings at a safe distance. Von Braun pointed out to his people that "it pays to advertise."

During von Braun's many trips to this center for meetings and to view static firings of the Saturn V first and second stage rockets, he became a regular visitor to the building and waited for and watched many tests from the exotic tower. The enclosed portion was equipped with closed-circuit television monitors where engineers could see the action on all points of the test stands.

As the countdown drew close to ignition of a rocket stage, von Braun and others on hand would climb up the stairs to view the test from the outside deck where they could enjoy the full impact of the noise.

Many of us old-timers have fond memories of waiting with von Braun for a test to go. He had a wonderful sense of humor and accepted the disappointments when a test had to be scrubbed, and he cheered and applauded a successful test firing.

Even today, you can go up on the tower and almost feel the presence of the charismatic von Braun, moving about the tower, slapping people on the back and smiling from ear-to-ear as the sound of the rockets thunder across the swamp. What a legacy we have in this great man and what he bequeathed to us.

— M.R.H.

## Marshall Stars

**Dr. James Bilbro, EB51**, has been appointed to the United States Advisory Committee to the International Commission for Optics. Bilbro's term begins Jan. 1, 1999, and will continue through Dec. 31, 2001.

**Lynn Grisham, BR01; William Walz, CR55; and Sonya Hutchinson, EO66**, received ISO 9000 Training certificates for an ISO 9000 Lead Assessor course at Hagerstown, Md. The course prepares students for full ISO 9001 implementations within NASA.

**Liz Stagg**, an employee in the training services group at Teledyne

Brown Engineering, won best paper recently during the Interservice/Industry Training Simulations and Education Conference in Orlando, Fla. Stagg's paper was titled "Planning and conducting joint integrated simulations for Spacelab missions."

*Marshall Center employees featured in "Marshall Stars" in the Marshall Star have made significant contributions to NASA and the Marshall Center by taking significant strides in leadership and dedication to their professional and/or educational development. Marshall Center employees may nominate themselves or another employee. Submit your nominations for consideration to Angela Storey, CO40, or call 544-0030.*



NASA photo

### **State Superintendent of Education visits Center**

Alabama State Superintendent of Education Dr. Ed Richardson and the Alabama Technology Task Force visited the Marshall Center Dec. 11. During their visit, Richardson and the group were briefed on NASA education technologies.

## **NASA, Central American nations sign Earth Science Agreement**

**N**ASA Administrator Dan Goldin and Miguel Eduardo Araujo Padilla, president of the Central American Commission on the Environment and Development, signed an Earth Science Agreement Dec. 10. The agreement calls for researchers at the Global Hydrology and Climate Center at the Marshall Center, at other NASA centers and in Central America to use satellite data to develop maps classifying the land cover of Central America.

NASA's Office of Earth Science seeks to understand the total Earth system and the effects of natural and human-induced changes on the global environment.

### **Obituary**

**Pitcock, Robert E., Sr., 77**, Decatur, died Nov. 21. Pitcock retired from the Marshall Center in 1977 where he worked as a project engineer. He is survived by his wife, Margaret Pitcock.

# **Future-X**

*Continued from page 1*  
Office at the Marshall Center.

Future-X vehicles and flight experiments will demonstrate technologies that improve performance and reduce development, production and operating costs of future Earth-to-orbit and in-space transportation systems. Technologies tested through Future-X will help industry and NASA develop and build future generations of space launch vehicles that are more advanced and cheaper than previous vehicles.

Under the cooperative agreement Boeing and NASA would advance 29 separate space transportation technologies through development and flight demonstrations of a modular orbital flight testbed called the Advanced Technology Vehicle (ATV). The ATV would be the first experimental vehicle to be flown in both orbital and reentry environments.

"The cutting-edge technologies to be demonstrated through Future-X are aimed at increasing U.S. competitiveness in the worldwide commercial space transportation market and decreasing future government costs for space access," said Frederick Bachtel, manager of the Space Transportation Programs Office at Marshall. "I believe we're turning the key that opens the door to affordable space transportation."

NASA is pursuing technologies that will benefit both military and commercial aerospace. Specifically, the Air Force has identified the critical technology and operations demonstrations that support their reusability requirements. Future-X accomplishes many of these demonstrations. "NASA has worked closely with the U.S. Air Force in seeking high-payoff technologies that maximize U.S. opportunities to reduce the cost of space transportation," said Bachtel.

The three companies selected to

provide flight experiments are Southwest Research Institute of San Antonio, Texas; Draper Laboratory of Cambridge, Mass.; and AeroAstro of Herndon, Va. The three NASA Centers selected to provide Future-X flight experiments are the Marshall Center; Ames Research Center at Moffett Field, Calif.; and Lewis Research Center of Cleveland, Ohio. Ames was selected to provide two experiments.

Selected industry-led experiments include a half-effect thruster system flight demonstration of new onboard in-space

propulsion technologies by Southwestern Research, estimated at \$2.5 million; an experiment to demonstrate an onboard intelligence planning system for autonomous abort landings by Draper, estimated at \$740,000; and an experiment to demonstrate technologies that will significantly reduce the access-to-space costs of small payloads by

AeroAstro, estimated at \$800,000.

Selected NASA-led experiments with substantial industry involvement include a Marshall-led experiment to demonstrate advanced propellantless in-space propulsion technologies through an electrodynamic tether which works as a thruster, estimated at \$6.6 million; Ames-led experiments to demonstrate advanced technologies of an integrated-vehicle health-management system, and to demonstrate ultra-high temperature ceramics for reusable, sharp hypersonic leading edges, estimated at \$4.5 million and \$4.2 million respectively; and a Lewis-led experiment to demonstrate propulsion technologies that will reduce the weight and size of advanced cryogenic upper stages, estimated at \$4.3 million.

The companies and NASA Centers were selected to provide the flight demonstrator and flight experiments from a total of 50 proposals submitted in response to NASA Research Announcement 8-22.

**Technologies tested through Future-X will help industry and NASA develop and build future generations of space launch vehicles that are more advanced and cheaper than previous vehicles.**

## Employee Ads

### Miscellaneous

- ★ Macintosh Performa 475 computer w/color monitor, keyboard, mouse, ClarisWorks, Internet access software, \$225. 778-9149
- ★ Black particleboard entertainment center, fits 31" television, \$75. 772-1552
- ★ Sears Craftsman 12-inch, 2-spd., tilt-head band saw w/blades, \$350. 882-2849 after 5 p.m.
- ★ Blue Topaz ring, \$200; Amethyst ring, \$100. 728-5679
- ★ Kenmore washer, \$100. 837-0085
- ★ Moving sale: wood office desk, \$75; loveseat, \$25; go-cart, \$700. 882-9785
- ★ Four Sears tires, P205/50R/15 lifetime limited warranty, chrome rims, \$1,200. 852-7387
- ★ NordicTrac Walkfit treadmill with tension control and exerciser computer, \$150. 883-9753
- ★ Global Village Powerport PC card, 28.8K fax/modem for Macintosh Powerbook 190, 1400 and 5000 series, software included, \$99. 883-0427
- ★ Student desk, 4-drawer, beige formica top, 21"x48", medium wood, \$25; Barcalounger recliner, \$25. 883-2757
- ★ Girl's 26" Schwinn bike, \$50; Royal electric typewriter w/stand and lamp, \$50; stationary bicycle, \$30. 881-7477
- ★ Fitness flyer, \$50; rowing machine, \$30; Health Rider, \$50; Top 10 weight trainer, \$30. 650-0086
- ★ Cherry wood Brunswick bumper pool table w/cover, four cue sticks and holder, \$500. 882-2369
- ★ Spring horse, \$20. 721-9005
- ★ Two sets of 1998 McDonald's teenie beanie babies still in bags, \$70. 895-9520
- ★ Oak table, 42" w/18" leaf and four chairs, \$250. 519-6536
- ★ Kerosene heater, \$75. 883-0503
- ★ Atomic ARC Extreme 170 skis, Tyrolia bindings, Alpine white/purple boots, size 5, \$150. 828-5308
- ★ Snapper riding lawnmower, bagger, 12HP, 33 Hi-Vac disc drive, pull-behind trailer, \$900. 837-2223
- ★ Kenwood stereo, six components, \$400. 837-8003
- ★ Chromecraft 51" wood-grain oval table, four leatherette chairs, \$150; large fireplace grate, \$10. 895-9196
- ★ 5HP go-cart, red and black, padded seat, roll bar, \$200. 837-6041

- ★ Set of Ty Bamm Beans still in bag. 971-0048
- ★ Beanie baby, Spot without the spot. 882-6955
- ★ Realistic stereo w/cabinet, \$40; golf clubs, bag, and cart, \$50. 536-8951
- ★ Bio-Dyne Ero gym, 200-pound stack, multiple stations: chest, arms, back, legs and more. \$1,150 obo. 881-8877
- ★ Drum set: T-J percussion w/camber symbols, \$350; four cherry snack tables w/stand, \$100. 722-9989
- ★ Ford F-150 camper shell, \$150. 650-5160

### Vehicles

- ★ 1987 Jeep Comanche pickup w/camper shell, 4.0-liter, AT, 2-WD, AC, PS, PB, 109K miles, \$3,500. 722-0076
- ★ 1996 Pontiac Transport, 7/8 passenger, PDL/PW, \$11,500 obo. 772-7842
- ★ 1988 Honda Accord, LXI, 145K miles, \$4,900 obo. 751-0682
- ★ 1988 Chrysler LeBaron convertible, yellow w/tan top, needs engine work, \$1,100. 778-9149
- ★ 1994 Nissan Quest GXE, 96K miles, power windows/seats/sunroof, alloy wheels, \$13,000. 773-4461
- ★ 1989 Toyota Tercel sedan, 5-spd., air, stereo, \$1,600. 830-8495
- ★ 1995 Dodge Ram pickup, Laramie SLT package, extended cab, 73K miles, \$12,000. 880-3254
- ★ 1989 Mazda 323, 5-spd., 117K miles, AM/FM, A/C, \$1,900. 883-6563
- ★ 1990 Plymouth Voyager SE van, 3-dr., sky blue, 7-passenger, FM/AM cassette, power locks, \$3,000. 881-5237
- ★ 1996 red T-Bird, V-8, AT, CD, moonroof, velour upholstery, \$12,200 obo. 232-1050
- ★ 1988 Honda Civic DX hatchback, 136K miles, 5-spd., AC, CD player, \$2,000. 461-7854
- ★ 1989 Pontiac Firebird Formula, V-8, AT, alloy wheels, T-tops, \$4,900 obo. 922-0958
- ★ 1989 Honda Prelude, red, 5-spd., cruise, air, sunroof, \$4,100 obo. 895-8363

### Lost

- ★ Prescription reading glasses, Stetson bronze wire frame. 544-7875

### Wanted

- ★ Little Tykes log cabin, small guitar. 971-0048

## Center Announcements

- ☛ **Toastmasters** — The NASA Lunar Nooners Toastmasters Club will meet at 11:30 a.m., Tuesday, Dec. 22 in the Bldg. 4610 cafeteria conference room. All Marshall employees, contractors and friends are invited. **Contact:** Lee Johns, 544-5241
- ☛ **MESA** — The Marshall Engineers & Scientists Association (MESA) will hold its Christmas membership meeting at 11:30 a.m., Thursday in Bldg. 4471, room C-105.
- ☛ **MOO** — The Management Operations Office (MOO) retirees will meet for a Christmas dinner at 6 p.m. Thursday in the Mullins Restaurant private dining room. All present or former MOO employees and retirees are invited. **Contact:** 539-0042 for directions.
- ☛ **U.S. Space & Rocket Center** — "Mysteries of Egypt" is the holiday-featured IMAX film in the Spacedome Theater at the U.S. Space & Rocket Center. This National Geographic adventure film, featuring Omar Sharif, explores the myths and legends of the Egyptian empire. Movie times are 5, 6, and 7 p.m. Dec. 26-30; matinees at 3 p.m. daily through Jan. 3. Tickets \$6 for adults and \$5 for children ages 3-12. **Contact:** The U.S. Space & Rocket Center, 837-3400
- ☛ **Annual Nut Sale** — Marshall is offering Center employees, on-site contractors and retirees the opportunity to purchase a variety of nuts during the annual Nut Sale from 8 a.m.- 4 p.m. daily in the Activities Bldg. 4752. Available on a first-come-first-serve basis are pecans (fancy, mammoth halves) for \$5.25 per pound; chocolate-covered pecans for \$6.75 per pound; English walnuts for \$3.25 per pound; jumbo raw peanuts for \$1.75 per pound; roasted, salted (in shell) natural pistachios for \$3.25 per pound; dry-roasted cashews at \$5.25 per pound; hickory-smoked almonds at \$3 per 12 ounces; natural, whole almonds for \$3.25 per 12 ounces; and honey-roasted almonds at \$3 per 12 ounces.

## Job Opportunities

**CPP 99-13-CV, AST, Aerospace Flight Systems, GS-861-14**, Flight Projects Office, Space Station Nodes Office. Closes Dec. 21.  
**Reassignment bulletin: 99-1-CV, AST, Technical Management, GS-801-13**, Office of the Director. Closes Dec. 21.

# MARSHALL STAR

Marshall Space Flight Center, Alabama 35812  
(256) 544-0030

The Marshall Star is published every Wednesday by the Internal Relations and Communications Office at the George C. Marshall Space Flight Center, National Aeronautics and Space Administration. Contributions should be submitted no later than Friday noon to the Marshall Internal Relations and Communications Office (CO40), Bldg. 4200, room 101. Submissions should be written legibly and include the originator's name. Send electronic mail submissions to: ann.bryk@msfc.nasa.gov The Marshall Star does not publish commercial advertising of any kind.

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and Communications — Norman Brown  
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NASA at Marshall Space Flight Center may be found at the following Web site: <http://www.msfc.nasa.gov>

U.S. Government Printing Office 1999-733-111-80040

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